REVIEW OF NORTH AMERICAN SPECIES OF *ORTHALTICA* WITH NEW GENERIC SYNONYMY (COLEOPTERA: CHRYSOMELIDAE: ALTICINAE)

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Abstract

Livolia Jacoby, 1903, and *Leptotrichaltica* Heikertinger, 1925, are synonymized with *Orthaltica* Crotch, 1873. A key to Nearctic species is given.

While in the United States (N.S.F. Senior Foreign Scientist Fellowship), I became acquainted with the genus *Orthaltica* and recognized that the species are the Nearctic representatives of the genus *Livolia* whose distribution is the Ryu-Kyu-Islands, Asia, Micronesia, New Guinea, Australia, and Africa. After further study, it also became apparent that *Leptotrichaltica* is a synonym of *Orthaltica* and that *Leptotrichaltica rhois* (B. E. White) is a synonym of *L. recticollis* (LeConte).

Upon my return to the Frey Museum, I was able to critically compare *Orthaltica, Livolia,* and *Leptotrichaltica,* and concluded that they are definitely congeneric. The main point in support of this proposal that all 3 genera are congeneric is that they all lack an extensor apodeme (Organ of Maulik). Previous observations regarding this structure in my revision of *Livolia* (1971) were incorrect. The oil of cloves which I used to prepare the specimens (as well as cold KOH) usually produces what appears to be an extensor apodeme. Since that time I have found that it is necessary to cook the insect in a 10% solution of KOH in order to see the extensor apodeme. Also, I could find no external morphological characters, new or classical, with which to separate the genera.

The male genitalia of all North American *Orthaltica* and *Leptotrichaltica* have an asymmetrical aedeagus, while the species of *Livolia* thus far examined have a symmetrical aedeagus. This is the best evidence that *Leptotrichaltica* is congeneric with *Orthaltica* as this character is rare in the Alticinae (Fig. 1a-d). The only other example I know is the genus *Chalaenosoma* in southern India. The aedeagus might prove to be important at the subgeneric level, but it is probably best not to speculate on subgeneric criteria until the entire genus is better known.

Genus *Orthaltica* Crotch

Orthaltica Crotch, 1873:69 (type-species: *Crioceris copalina* Fabricius; N. America; Horn, 1889:236, 247; Blatchley, 1910:1206, 1215; Heikertinger, 1924-25 (1925):65; Arnett, 1963:914, 938.

Leptotrix Horn, 1889:236, 249 (type-species: *L. recticollis*; N. America) (*nec* Menge, 1868: Araneae) see *Leptotrichaltica*.

Livolia Jacoby, 1903:15 (type-species: *L. sulcicollis* Jac.; Africa; Scherer, 1961:268; 1969:10, 19, 118, 242; 1971:1-37. **New Synonym.**
Leptotrichaltica Heikertinger, 1924-25 (1925):68 for *Leptotrix* Horn. **New Synonym.**
Micrepitrix Laboissiére, 1933:205 (type-species: *M. coomani* Lab.; Tonkin; Gressitt, 1955:35 (Alticinae); Gressitt & Kimoto, 1963:404, 575; Samuelson, 1965:219; Scherer, 1969:10, 19, 98; 1971:10 (as synon.)
Serraticollis B. E. White, 1942:17 (type-species: *S. rhois* White; Calif.; Arnett, 1963:938 (as synon.)

Shape compact, elongate-oval; length of body 1.0 to 2.8mm; color usually brownish but sometimes nearly black; elytral vestiture somewhat dense, but varies.

The features which best characterize this genus are: each elytron with 9 more or less regular rows of punctures (the lateral and sutural rows not counted); punctation of scutellar field of elytra tends to be somewhat irregular and may show variation within the same species; lateral margin of pronotum usually toothed; antebasal impression of pronotum not interrupted laterally by longitudinal furrows, but instead, bending posteriorly and joining hind angles; pronotum strongly punctate; punctation of head moderate to strong, however, certain species groups distributed in Asia and Africa with as few as 4 setigerous punctures across frons; anterior coxal cavities closed; anterior and middle coxae widely separated; hind femora slightly swollen but small when compared to other Alticinae; extensor apodeme (organ of Maulik) not present.

Type of genus: *Orthaltica copalina* (Fabricius)

Key to the Nearctic Species of Orthaltica

1. Sides of pronotum not serrate .... *melina* Horn
1′. Sides of pronotum serrate 2

2(1′). Punctation of elytral disc irregular; length 2.5-2.8mm .... *copalina* (Fabricius)
2′. Punctation of elytral disc serial; length 1.7-2.5mm 3

3(2′). Length 1.8-2.5mm; sexual dimorphism strongly evident: middle femora constricted at base, stronger in male than in female (Fig. 2b); pronotum of male longer and more produced at apex than in female (Fig. 3) .... *recticollis* (LeConte)
3′. Length 1.70-1.73mm; sexual dimorphism weakly evident: middle femora not constricted in either sex; pronotum of both sexes subequal .... *parkeri* (B. E. White)

Nearctic Species

Orthaltica copalina (Fabricius)

Crioceris copalina Fabricius, 1801:466; Olivier, 1808:720, Pl. 5, Fig. 92.
Orthaltica copalina Crotch, 1873:69; Horn, 1889:248; Blatchley, 1910:1215.
Haltica forticornis Illiger, 1807:111 (Pennsylvania; Berlin ?)

DESCRIPTION: Length 2.5 to 2.8mm; color piceus (rarely reddish brown); head usually strongly punctate (Fig. 4b) although some specimens show finer punctation; frontal tubercles strongly convex; antennal sockets approximate; antennae long, more than two-thirds length of elytra (longer in males); punctation of pronotum as coarse as on elytra and head, punctation less dense in front of antebasal depression; punctation of anterior elytral disc (scutellar field) confused, humeral calli very convex, basal calli raised; aedeagus, Fig. 1a.

DISTRIBUTION: Alabama, Florida, Illinois, Indiana, Iowa, Maryland, Massachusetts, Missouri, New York, North Carolina, Pennsylvania, South Dakota; Canada (Ad and Lenox Co., Ontario)

NEW DISTRIBUTION RECORDS: ILLINOIS: 2 without further data (Mus.Frey); MARYLAND: 1 Bladensburg, Ja.13/16, Ducket (Mus.Frey); MASSACHUSETTS: 13 ex. Lawrence (Mus.Frey); MISSOURI: 2 Fern Glenn, Franklin Co., G. W. Bock (Mus.Frey); NEW YORK: 3 Ithaca, June 23, 1925 (Mus.Frey); 1 White Lake July 12, 1897, J. L. Labriskic (Mus.Frey); 2 Pearl River, K. P. Jansson (Mus.Frey); NORTH CAROLINA: 1 Black mts. V.1927, (Mus.Frey); PENNSYLVANIA: 2 Wilmerding (Mus.Frey); 2 without further data (Mus.-Frey); 8 Bethlehem (Mus.Frey); 1 Philadelphia (Mus.Frey); Steelton, Dauphin Co.; Stoverdale; Heckton Mills; Harrisburg (all coll. Balsbaugh); SOUTH DAKOTA: Lincoln Co., Newton Hills State Park on *Rhus glabra*; Canton; Union Co., Union Co. State Park on *Rhus glabra*.-CANADA: Ontario, Ad and Lennox Co., J. F. Brimley (South Dakota State Univ.).

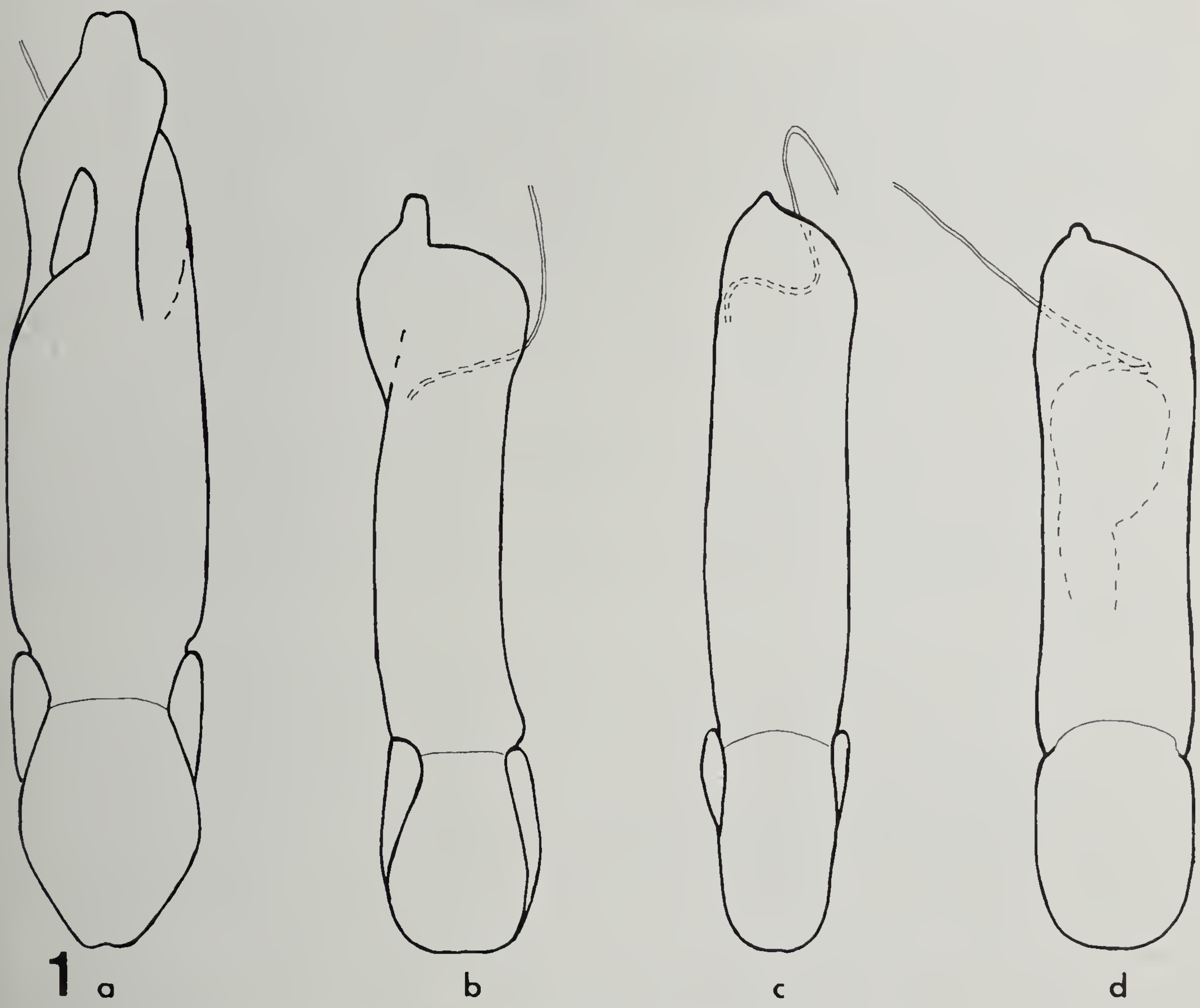

Fig. 1: Aedeagus of a) *Orthaltica copalina*, b) *O. melina*, c) *O. recticollis*, d) *O. parkeri* (90 X).

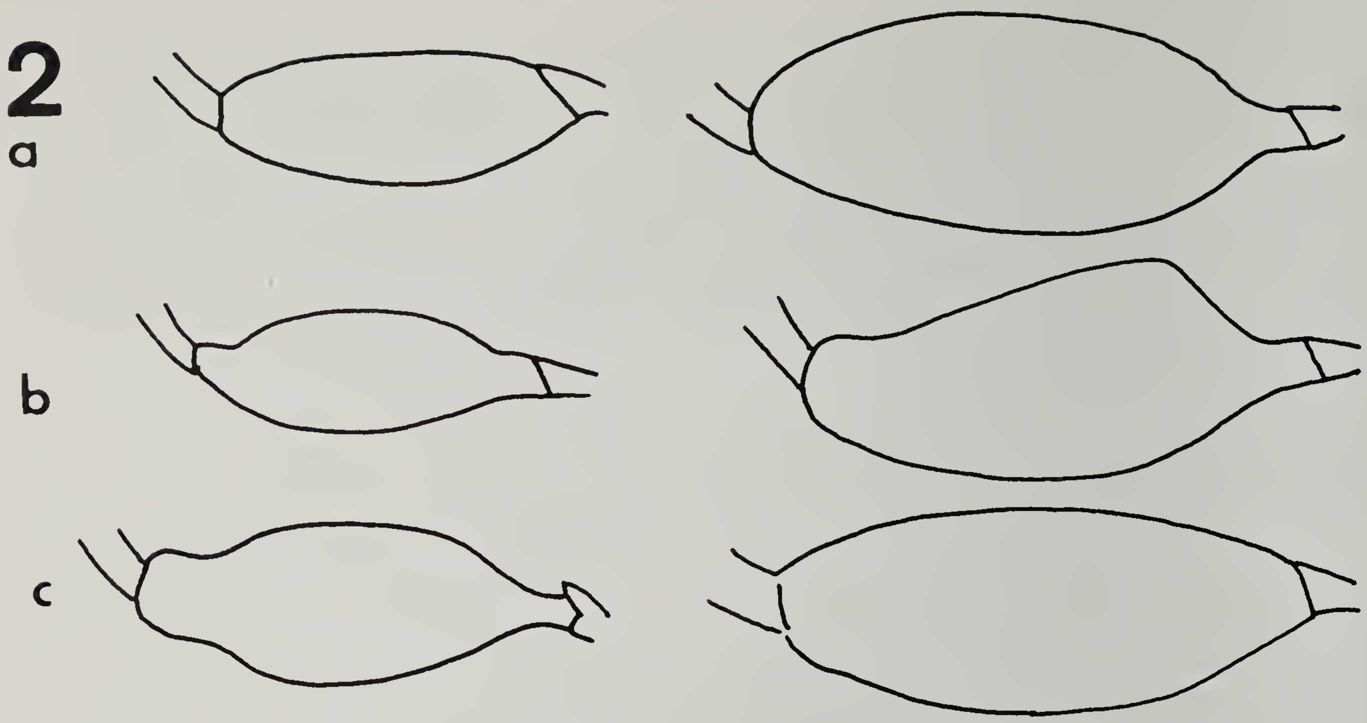

Fig. 2: a) front femora, b) middle femora, c) hind femora of left *Orthaltica parkeri,* right *O. recticollis* (60 X).

Orthaltica melina Horn

Orthaltica melina G. Horn, 1889:249 (Kansas, Texas; Acad. Nat. Sci. Pa.); Blatchley, 1910: 1215, 1216 (Indiana).

DESCRIPTION: Length 2.0 to 2.2mm; yellowish to reddish brown; elytra occasionally with translucent, seemingly dark spots; antennal sockets nearly approximate (Fig. 4a); punctation between eyes slight and scattered; punctation on anterior elytral disk not confused; aedeagus as in Fig. 1b.

DISTRIBUTION: Alabama, Indiana, Kansas, Pennsylvania, South Dakota, Texas.

NEW DISTRIBUTION RECORDS: PENNSYLVANIA: Bucks Co., 2 mi. E. Mechanicsville on *Rhus radicans* L., E. U. Balsbaugh, Jr.; SOUTH DAKOTA: 38, Union Co. State Park on *Rhus glabra,* 11-VIII-71, G. Scherer, (Mus.Frey); 12, Lincoln Co., Newton Hills State Park on *Rhus glabra,* 7-VII-71, G. Scherer (Mus.Frey); loc. cit. E. U. Balsbaugh, Jr., TEXAS: 1 female, Dallas (Mus.Frey).

Orthaltica recticollis (LeConte) **New Combination**

Haltica recticollis LeConte, 1862 (1861):358 (California—Mus. Comp. Zool. Cambridge, Mass.).

Orthaltica recticornis (LeConte), Crotch, 1873:70.

Leptotrix recticollis G. Horn, 1889:250, Pl. 6, Fig. 11 (California and Oregon).

Leptotrichaltica recticollis Heikertinger, 1924-25 (1925):68.

Serraticollis rhois B. E. White, 1942:18, Fig. 1, 2, 4 (California, Riverside Co., Beaumont on flowers of *Rhus* sp.-Cal. Acad. Sci., San Francisco) **New Synonym**

O. recticornis appears to be a misspelling by Crotch (1873) for *recticollis.* This is not cited again, even by Horn (1889) when he erected the genus *Leptotrix* for *recticollis.* In his description of *Haltica recticollis,* LeConte stated: "The western representative of our *H. forticornis* Ill. (?*copalina* Fabr.), though very different from that species."

DESCRIPTION: Length 1.8 to 2.4mm; color of head and pronotum reddish, elytra yellowish to piceus brown, slightly brownish and clouded along the suture, darker than pronotum; punctation of elytral disc entirely regular; antennae moderately long, nearly one-half elytral length; head with scattered punctation between eyes, vertex alutaceous; frontal tubercles not prominent, shiny, seemingly polished; antennal sockets widely separate (Fig. 4c); sexual dimorphism evident, pronotum of male longer and more produced in front than in female (Fig. 3); femora constricted at base, constriction more pronounced in male than in female (Fig. 2); aedeagus Fig. 1c.

NEW DISTRIBUTION RECORDS: CALIFORNIA: Trinity Co., V.1.17, F. W. Nunenmacher, coll. 1 female (Mus.Frey), 1 ex. SDSU coll., (Mus.Frey in exchange from Field Mus., Chicago, Nunenmacher coll.); California without further data 2 males, 2 females (Mus.Frey).

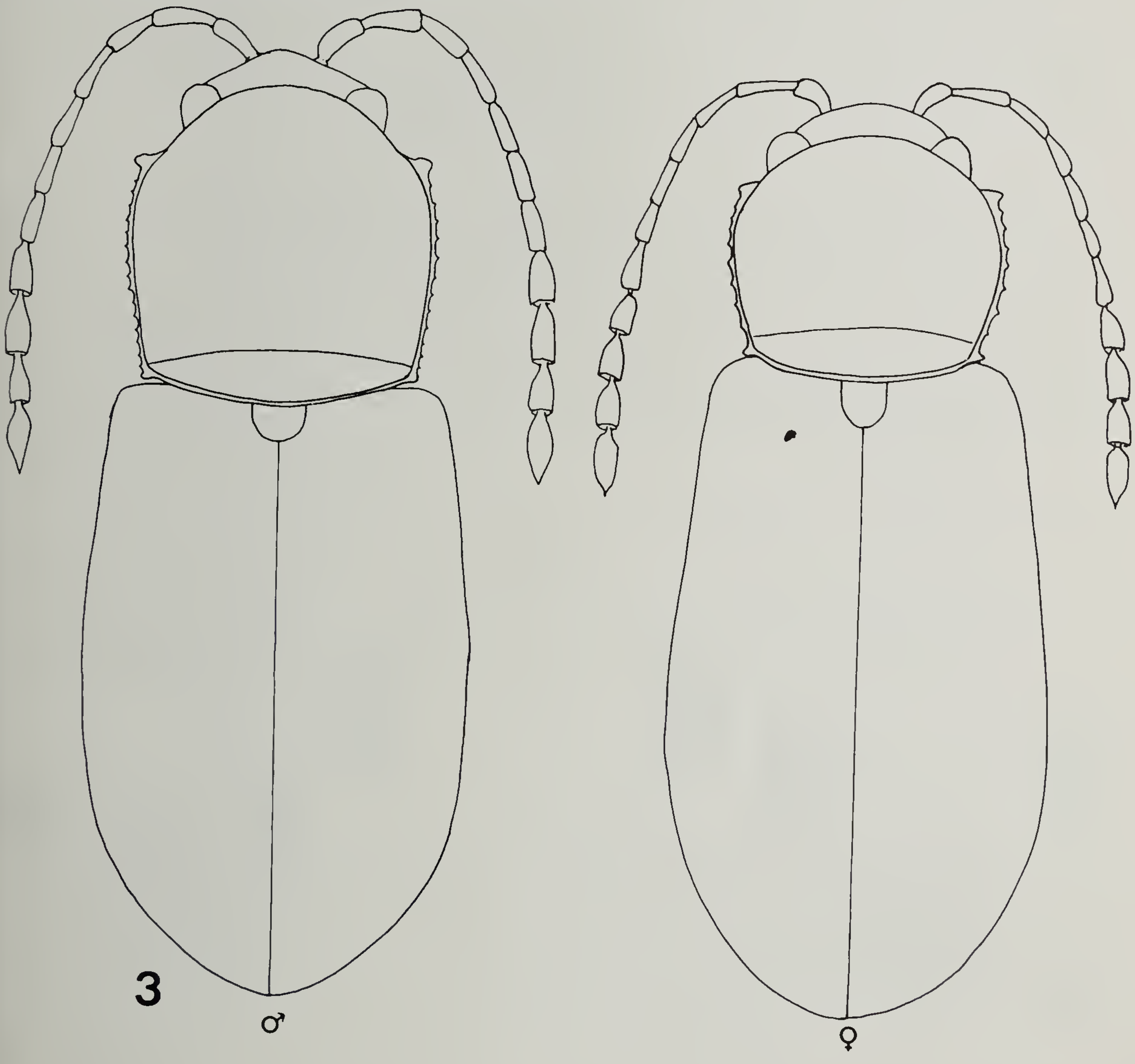

Fig. 3: *Orthaltica recticollis* male and female (40 X).

Orthaltica parkeri (B. E. White) **New Combination**

Serraticollis parkeri B. E. White, 1942:20, Fig. 3 (Arizona: Globe, on *Rhus*—Calif. Acad. Sci., San Francisco).

DESCRIPTION: Length 1.70 to 1.73mm; middle femora not constricted at base in either sex (Fig. 2); sexual dimorphism less evident, pronotum of male and female subequal; aedeagus Fig. 1d. There is no apparent difference in the coloration between *parkeri* and *recticollis*. When compared with the males of *parkeri*, the males of *recticollis* show a stronger punctation of the elytra and pronotum as well as somewhat more convexity of the elytral intervals. The head in both species is similar; vertex shagreened, shiny and somewhat polished between the eyes with scattered punctures; the area between the oblique frontal tubercles forms a pit-like depression; the diameter of the eyes compared to the interocular distance is proportionally the same with regard to the size of the specimen. The only other noticeable difference are in the femora. In *O. recticollis* the male femora (Fig. 2), especially the middle femora, are swollen and display a noticeable stalk-like constriction near the base. The degree of "swelling" of the middle femora shows variation in different specimens. Even though the female femora are less enlarged, they also show a somewhat stalk-like constriction at the base. The femora of male *parkeri*, even though less enlarged, still display the stalk-like character in the middle and hind femora. The enlarged middle and hind femora in *recticollis* are similar in shape to the femora of *vestita* (Baly) from Australia.

Even though the pronota of the males of *recticollis* and *parkeri* have an oblong appearance, measurement shows the length and width of both species to be subequal (Fig. 5); the pronotum of the female of *recticollis* is shorter than broad; I had no female specimens of *parkeri* to examine (*parkeri* males: 0.55 × 0.55mm; 0.55 × 0.57mm; *recticollis* males: 0.75 × 0.75mm; 0.65 × 0.67mm; *rhois* males: 0.77 × 0.81mm; 0.85 × 0.83mm; *recticollis* females: 0.68 × 0.58mm; 0.65 × 0.58mm; 0.75 × 0.70mm; *rhois* females: 0.65 × 0.56mm; 0.63 × 0.53mm).

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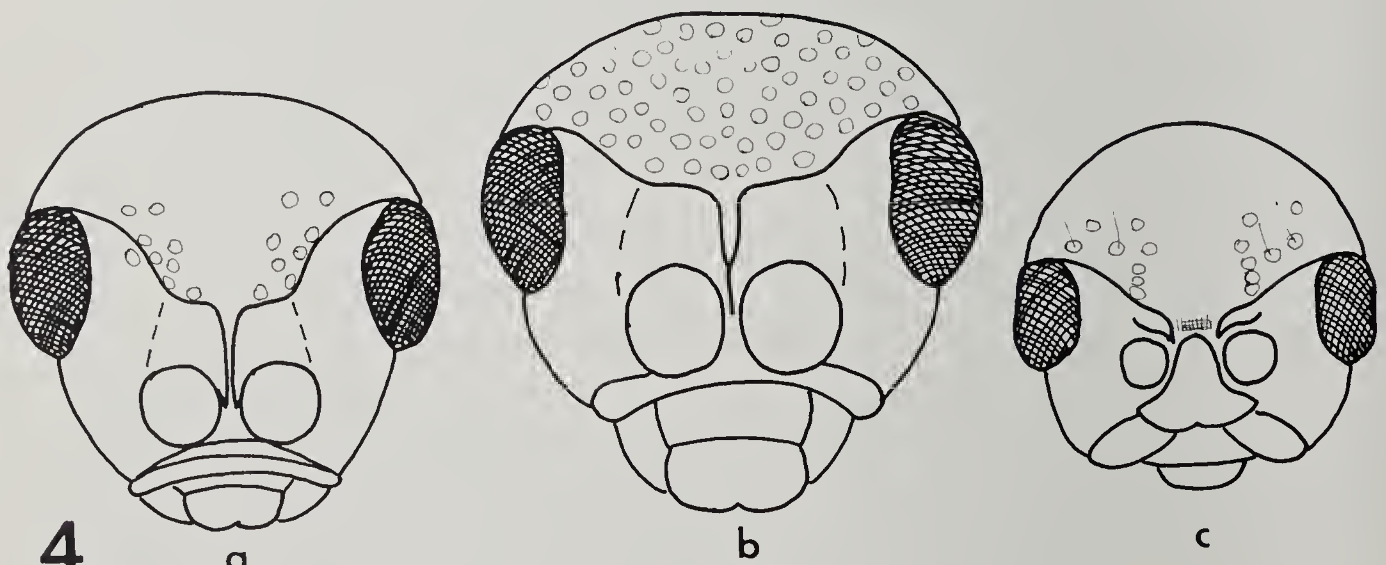

Fig. 4: Head of *Orthaltica melina* a) *O. copalina*, b) *O. recticollis*, c) (55 X).

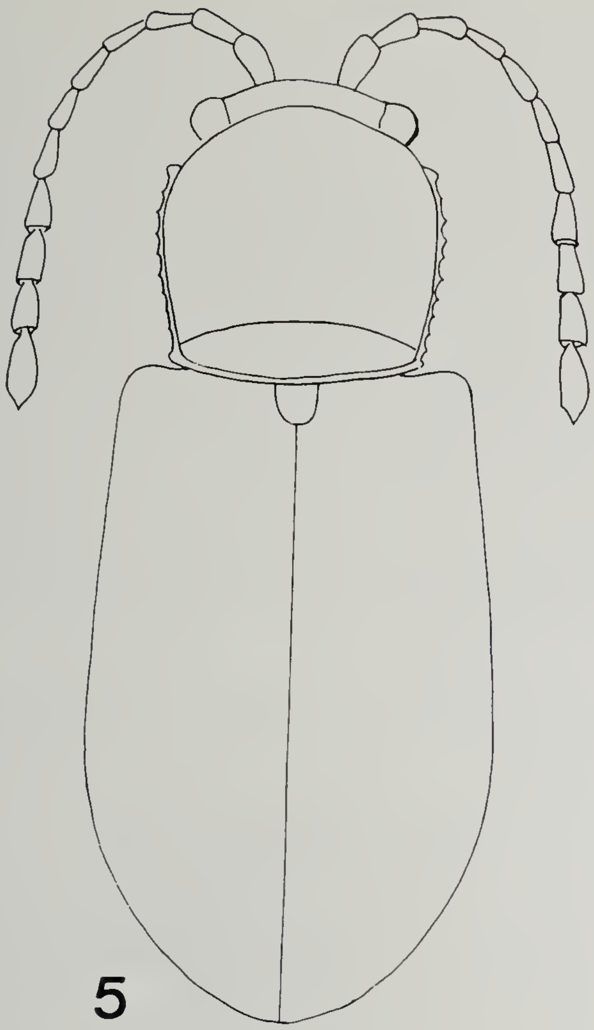

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Fig. 5: *Orthaltica parkeri* male (40 X).

The aedeagus of both species is very similar. In *parkeri* it is somewhat more pointed, apically, although examination of a longer series may show this to be individual variation.

There is a size difference between the 2 species. *O. parkeri* is shorter (*parkeri* 1.70 and 1.73mm; *recticollis* male 2.30, 2.20, 2.10, and 1.80mm; females 2.10, 2.00, 2.40, 1.95 and, 2.00mm).

Parkeri may prove to be a small form or a subspecies of *recticollis*. As mentioned above, longer series of specimens should be examined.

Supplement

In G. A. Samuelson's paper, "Alticinae of New Guinea I. *Micrepitrix*" (1965), 3 new species are described, 1 of which is *M. serraticollis*. At the time I wrote my paper, "The genus *Livolia* Jacoby and its disputed position in the system" (1971), I did not know of Samuelson's paper and used the name *serraticollis* in the description of a new *Livolia*. A new name is given here for the species which I named as *Livolia serraticollis*.

Orthaltica impressiceps **nom. nov.** et **comb. nov.**

Livolia serraticollis Scherer, 1971:12, 27, Pl. II Fig. 15, Pl. IV Fig. 15 (Burma: Tenasserim—BMNH)

Zusammenfassung

Während meines Aufenthaltes in den U.S.A. wurde ich mit der Gattung *Orthaltica* konfrontiert und erkannte, dass es sich hier nur um die nearktischen Vertreter eines Genus handelt, das seine Verbreitung über die Ryu-Kyu-Inseln, Asien, Mikronesien, Neu Guinea, Australien und Afrika hat. Bei intensiverer Beschäftigung mit dieser Gruppe erwies sich die Gattung *Leptotrichaltica* als synonym zu *Orthaltica,* die Art *Leptotrichaltica rhois* als synonym zu *Leptotrichaltica recticollis.* Die Stellung in der Unterfamilie Alticinae wird bewiesen. Die Verbreitung dieser Gattung ist eine typisch tertiäre. Die nearktischen Arten zeigen mit ihrem asymmetrischen Aedoeagus subgenerische Eigenschaften. In einem speziellen systematischen Teil wird sämtliche Literatur für die Gattung *Orthaltica* zitiert, es folgt eine Gattungsdiagnose. Ein Bestimmungsschlüssel führt zu den nearktischen Arten. Literatur und Verbreitung der nearktischen Arten ist angeführt, die Futterpflanzen zitiert. In einem Anhang bekommt das Homonym *O. serraticollis* Scherer einen neuen Namen *impressiceps.*

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